

REMARKS

The Office Action indicated that Claims 1-6, 14-19 and 21-31 would be allowable if 35 U.S.C. §112 issues were addressed.

Applicant appreciates the courtesy of a brief phone conference with Examiner Kao where the issue of “performed continuously” was discussed.

In this regard, applicant discloses, two separate embodiments of using filter material. In Figure 1, a filter tape can be sequentially advanced and the particulate matter that is collected at a specific location on the filter (measuring spot 7) is subject to both a mass measurement and a composition analysis within the same instrument.

Thus, in Figure 1, a tape is positioned within a collecting unit that collects the particulate matter from the sample gas at a measuring spot 7 on the filter tape. Subsequently, a mass measuring unit measures the mass of that collected particulate matter while it is still on the filter tape, and then the tape is advanced to a composition analyzing unit that analyzes the composition of the particulate matter again while it is still on the filter tape so that the measurement of mass and composition is performed on the same particulate matter on the filter tape within the particulate matter analyzer.

As can be appreciated, the order in which either mass measurement or composition analysis can be switched, but it is still the same sample of particulate matter on the filter tape that is measured so that the respective measurements are correlated and provide meaningful data. Subsequently, the tape can be collected as shown in Figure 1, and individual samples (at measuring spots) on the tape can then be preserved, if necessary, for further analysis.

Our specification describes the mode of measurement as follows:

[0056]

The tape-shaped filter 5 before absorbing (collecting) particulate matter 2 is wound in a roll around the feeding reel 6a, for example, by a motor (not shown), and is fed from the feeding reel 6a with a predetermined length in every predetermined period of time (1 hour) to effectively provide a plurality of filter segments or members that are sequentially transported for measurement of mass and composition. The particulate matter 2 is collected onto the tape-shaped filter 5, which has been fed as described above, in the chamber 8a, so that a measuring spot 7 is formed. Then, the particulate matter 2 collected in the measuring spot 7 is subjected to a measurement with the mass measuring unit 4 and, subsequently, to an analysis with the composition analyzing unit 9. Then, the tape-shaped filter 5 which has finished the measurement and analysis is successively wound around the winding reel 6b.

[0064]

According to an analyzer 1 having the above-described configuration, the measurement of the mass and concentration and the analysis of the composition such as the metallic elements for the particulate matter 2 collected on the tape-shaped filter 5 can be executed automatically and continuously without special requirements such as cutting of the tape-shaped filter 5.

An alternative embodiment utilizes separate individual filters on a turntable as shown, for example in Figures 9 and 10, and the same particulate matter, collected on a measurement spot in one cycle of measurement, can be rotated, for example on the turntable, so that the measurement of mass and the analysis of the composition of the particulate matter can again be conducted within the same particulate matter analyzer instrument as follows:

[0076]

The filter holding mechanism 12, in which the plurality of filters 11 are mounted on the circumference thereof, is rotated by a predetermined angle (45° in this embodiment) in a predetermined period of time (1 hour) around a vertical axis, and collects the particulate matter 2 on one of the filters 11 having entered into the chamber 8a so as to form the measuring spot 7 on the filter. Then, the particulate matter 2 collected in the measuring spot 7 is subjected to a measurement with the mass measuring

unit 4 received in the chamber 8a and an analysis with the composition analyzer which is arranged next to the chamber 8a. Then, the inspected filter 11 is detached (recovered) from the filter holding mechanism 12 for storage, and the next filter 11 is detached (recovered) from the filter holding mechanism 12 for storage, and the next filter 11 is attached to the position where the inspected filter has been detached therefrom.

[0079]

In concurrence with the formation of the measuring spot 7, the mass measuring unit 14 is operated to measure the particulate matter 2 collected in the measuring spot 7. The details of the measuring process by means of the mass measuring unit 4 is the same as those described with respect to the first embodiment.

[0080]

After forming the measuring spot 7 and performing the mass measurement with the mass measuring unit 4, the filter holding mechanism 12 is rotated again around the vertical axis for the predetermined angle (45°) and stopped. In this manner, the filter 11 which has completed the measurement with the mass measuring unit 4 is transferred to the composition analyzing unit 9 for analyzing the composition with the composition analyzing unit 9. The details of the analyzing process are the same as those described with respect to the first embodiment.

As the Office Action noted on Page 4, our specification, for example in Paragraph 0018, noted that a highly sensitive quantitative analysis of the particulate matter. . .can be practiced continuously and easily. Also in Paragraph 0064, it was noted that the measurement of mass in concentration and the analysis of the composition collected on the tape sheet filter, can be executed automatically and continuously without special requirements.

It is believed that the basis for the issue raised on Claims 1-6 and 21-23 under the first paragraph of 35 U.S.C. §112 is not on the basis of having an automatic and continuous measurement instrument, but the possible interpretation that the claim language is referring to a continuous measurement on the measuring spot, when in fact the issue is the same measurement

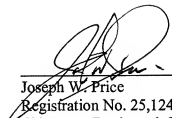
spot with the same particulate material, is subject to a measurement within the particulate matter analyzer.

As noted in the telephone conference, Claims 27-31 did not present the issue of "continuously" and are believed allowable.

If the Examiner believes that a telephone interview will help the further prosecution of the present case, the undersigned attorney can be contacted in the listed phone number.

Very truly yours,

SNELL & WILMER L.L.P.



Joseph W. Price
Registration No. 25,124
600 Anton Boulevard, Suite 1400
Costa Mesa, California 92626-7689
Telephone: (714) 427-7420
Facsimile: (714) 427-7799